

## **REMARKS**

The Applicant respectfully requests reconsideration and Allowance of Claims 2-8 and 10-22 in view of the above amendments and following arguments.

### **35 U.S.C. §102 (e) REJECTION**

Claims 1-5, 9-10, 13-16, and 20 were rejected under 35 U.S.C. §102(e) as anticipated by Ono et al. (U.S. Patent No. 6,097,525).

### **35 U.S.C. §103 (a) REJECTION**

Claims 6-8, 11-12, 17-19, and 21-22 were rejected under 35 U.S.C. §103(a) as obvious in view of Ono et al. (U.S. Patent No. 6,097,525).

## **STATUS OF THE CLAIMS**

Claims 1 and 9 have been canceled.

Claims 2-8, and 10-22 remain pending in this case.

## **CLAIMS 2-8 AND 10-20 ARE ALLOWABLE BECAUSE THEY ARE NOT TAUGHT OR SUGGESTED BY ONO ET AL.**

Independent claims 2, 10, 13, and 20 include, among others, the limitation that the cw laser is caused to vary in substantially a quadratic manner. Likewise, dependent claims 3-8, 11-12, 14-19, and 21-22, respectively, include the same and other limitations. As set forth more fully hereafter, the remaining claims are, as a result, allowable over the cited art.

## **ONO ET AL.**

### **1. 102 Rejection.**

In rejecting claims 1-5, 9-10, 13-16 and 20 as anticipated by Ono et al., the Examiner has asserted that Ono et al. discloses an optical device with all the limitations set forth in the claims including, in pertinent part, a phase modulator connected in series with the cw laser, wherein the phase modulator is conformed to cause the phase of the light from the cw laser to vary in substantially a quadratic manner over a selected time range. Support for this is said to be found at "Fig 13, column 7 lines 8-10." Applicant respectfully disagrees.

Column 7, lines 8-10 of Ono et al. state: "Also, the LN optical phase modulator 3 modulates the optical phase into  $\pi$  or 0 according to the value, 1 or 0, of an electrical signal to be input." All that is fairly and clearly taught by Ono et al. is a binary (two-level) modulating signal that is applied to the phase modulator. This is confirmed by the further disclosure in Ono et al. continuing at column 7 lines 8-27 and by examination of Fig. 13.

In contrast, applicant's disclosure from page 5 line 13 through page 9 line 24, for example, discloses applying an appropriate quadratic phase modulation (page 5, lines 24-26) to an optical pulse which results in a substantial narrowing of the temporal width of the pulse as it propagates over a dispersive optical fiber. (See also Fig 2). As disclosed, this can be a substantial benefit in optical communications where fiber dispersion is normally viewed as a serious detriment. Ono et al. does not disclose or suggest the application of a quadratically varying waveform, nor does Ono et al. disclose or suggest the application of such waveforms to narrow pulses transmitted over dispersive fibers. In fact, applicant's invention could not and would not perform the desired function of pulse narrowing if the binary modulating waveform disclosed and suggested by Ono et al. were applied to the phase modulator. Applicant respectfully submits, therefore, that claims 2-5, 9-10, 13-16 and 20 are not anticipated by Ono et al. and requests that they be reconsidered and allowed.

#### 2.103 rejection.

As to the rejection under Section 103, the Examiner states that claims 6-8, 11-12, 17-19 and 21-22 are unpatentable over Ono et al. although the Examiner admits that Ono et al. does not teach or disclose the use of a plurality of cw lasers each connected to a plurality of phase and intensity modulators. Still, the Examiner supports the rejection for the stated reason that using a plurality of cw lasers and optical couplers to combine the laser signals of wavelengths is well known and commonly implemented in the WDM [wavelength division multiplexing] art. Such an arrangement, it is said, allows for high bandwidth optical transmission containing multiple optical signals over one transmission line. Therefore, the Examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Ono et al. to have a plurality of cw lasers and an optical coupler to combine light signals from the cw lasers.

To begin with, the Examiner cites no support for this assertion from the art itself. That is to say, Ono et al. does not suggest such a modification at all. Additionally, applicant discloses an apparatus and method for TDM [time division multiplexing] which embodies the quadratic phase modulation as discussed above as well as multiple lasers and an optical coupler to combine their light. As set forth in the application ( See eg page 9, line 24 through page 10, line 21 and Figs. 6 and 7), when light from these pulse modulated lasers is transmitted over dispersive fiber, the pulses from each laser are compressed and interleaved in time. None of these elements are disclosed or suggested by Ono et al.. Further, applicant's invention uses time division multiplexing, TDM, not the wavelength division multiplexing, WDM, suggested by the Examiner.

For these reasons, as well as for the reasons set forth above as to the 102 rejections, applicant respectfully submits that claims 6-8, 11-12, 17-19 and 21-22 are allowable over the cited art to Ono et al.. Applicant respectfully requests reconsideration and allowance of claims 6-8, 11-12, 17-19 and 21-22 .

#### CITED BUT NON-APPLIED REFERENCES

The subsidiary references have been reviewed but are submitted to be less relevant than the relied upon references.

**CONCLUSION**

In light of the above, Applicant respectfully requests reconsideration and allowance of Claims 2-8 and 10-22. If the Examiner should feel that any issue remains as to the allowability of these claims, or that a conference might expedite allowance of the claims, the Examiner is asked to telephone the undersigned attorney.

Applicants intend this to be a complete response. No fee is believed due; however if a fee is due, please charge deposit account No. 19-1453 (TAMUS 106-674)

Respectfully submitted,

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